

Railroad Preemption Process

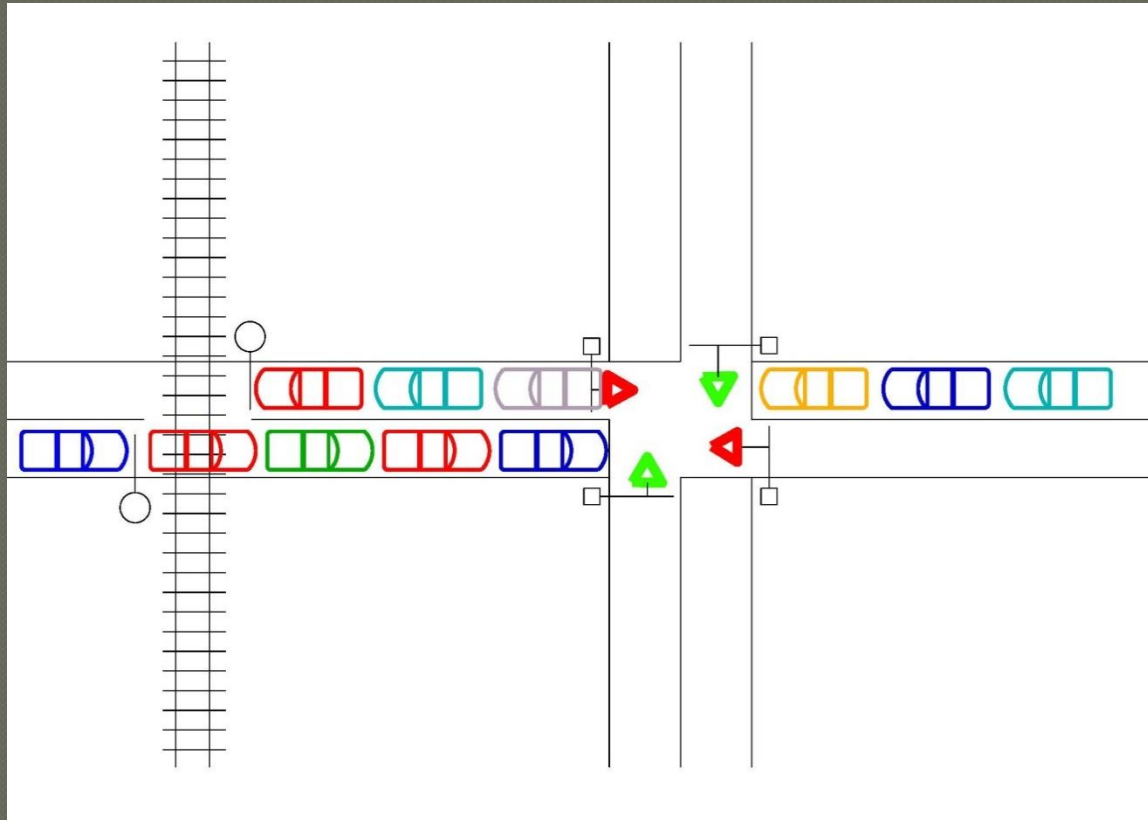
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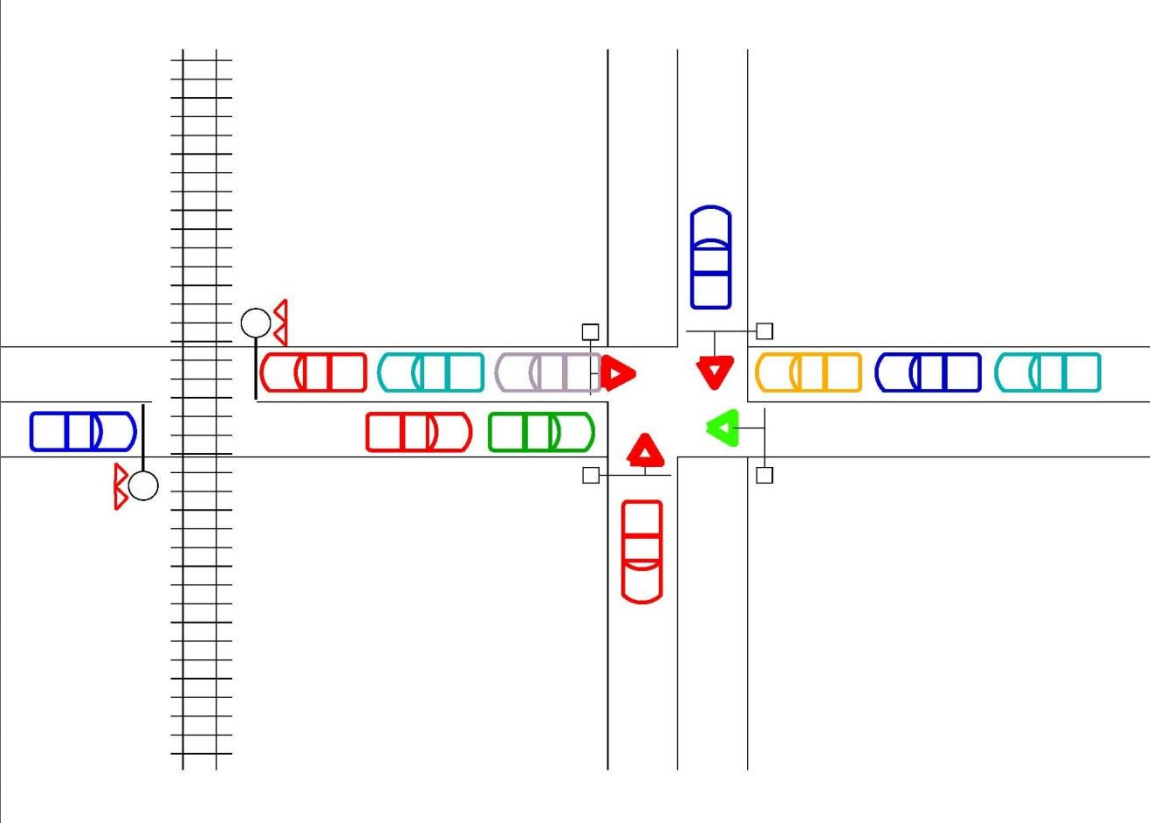
Background

What is preemption?



The Purpose of Preemption:





Some of the Terms:

- Advanced vs. Simultaneous Preemption.
- Two main calculation methodologies-
 - Field review method.
 - Modeling method.



Comparison

MODELING METHOD

- Calculate the time needed for the design vehicle to clear the crossing from a stop.
- Calculate/Add the time needed for Right of Way Transfer.

FIELD REVIEW METHOD

- Site visit to measure time needed to vehicle to clear crossing.
- Calculate/Add the time needed for Right of Way Transfer.

Comparison

MODELING METHOD

- Add pedestrian time (if applicable).
- Usually results in longer, more conservative times.

FIELD REVIEW METHOD

- Add pedestrian time (if applicable).
- Usually results in shorter times.

DOTD's Method of Choice:

Field Review Method:

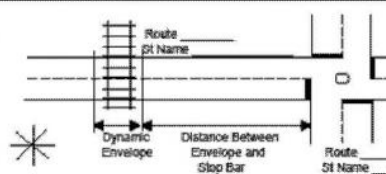
- Based on actual observation of the drivers of the area.
- Observers will see if there is really a need.
 - Do drivers really stop on tracks?

**LaDOTD TRAFFIC OPERATIONS AND ENGINEERING
FIELD OBSERVATION METHOD
RAILROAD PREEMPTION WORKSHEET**

General Information

Analyst _____ Date _____
 District _____ Time _____
 Parish _____ Area Type: ☐ rural, or ☐ urban
 TSI No. _____

Geometric Input



Route _____
 Rt Name _____

Distance Between Envelope and Stop Bar _____

Route _____
 St Name _____

Railroad Co. _____
 Mainline ☐ or Spur ☐

Number of Tracks _____
 Dynamic Envelope _____ ft
 Distance Between Envelope and Stop Bar _____ ft
 Railroad Control: ☐ Crossbucks
☐ Lights/Ground
☐ Lights/Truss
☐ Gates

Input Field Measurement

Cycle	Queue at start of Green				Last Vehicle in Envelope	
	Total Number of Vehicles	Number of Passenger Vehicles	Number of Single Unit Vehicles	Number of Tractor Trlr Vehicles	Is a Vehicle stopped in envelope?	Nth Vehicle
1					Yes No	
2					Yes No	
3					Yes No	
4					Yes No	
5					Yes No	
6					Yes No	
7					Yes No	
8					Yes No	
9					Yes No	
10					Yes No	
11					Yes No	
12					Yes No	
13					Yes No	
14					Yes No	
15					Yes No	
Maximum						
Minimum						
Average						

Glossary and Notes

Dynamic Envelope _____ - Typically 15 ft for 90 deg crossing, 6 ft track width plus 6 ft clearance on either side.
 Single Unit Vehicles _____ - Delivery Trucks and Buses
 Tractor Trlr _____ - Tractor Trailer Vehicles
 Nth Vehicle _____ - The last vehicle that stops for the signal and is in (or just before) the Dynamic Envelope.
 Time to Clear _____ - Time from start of green until back of Nth Vehicle clears Dynamic Envelope.

rev 5/02

Some of the Reasoning:

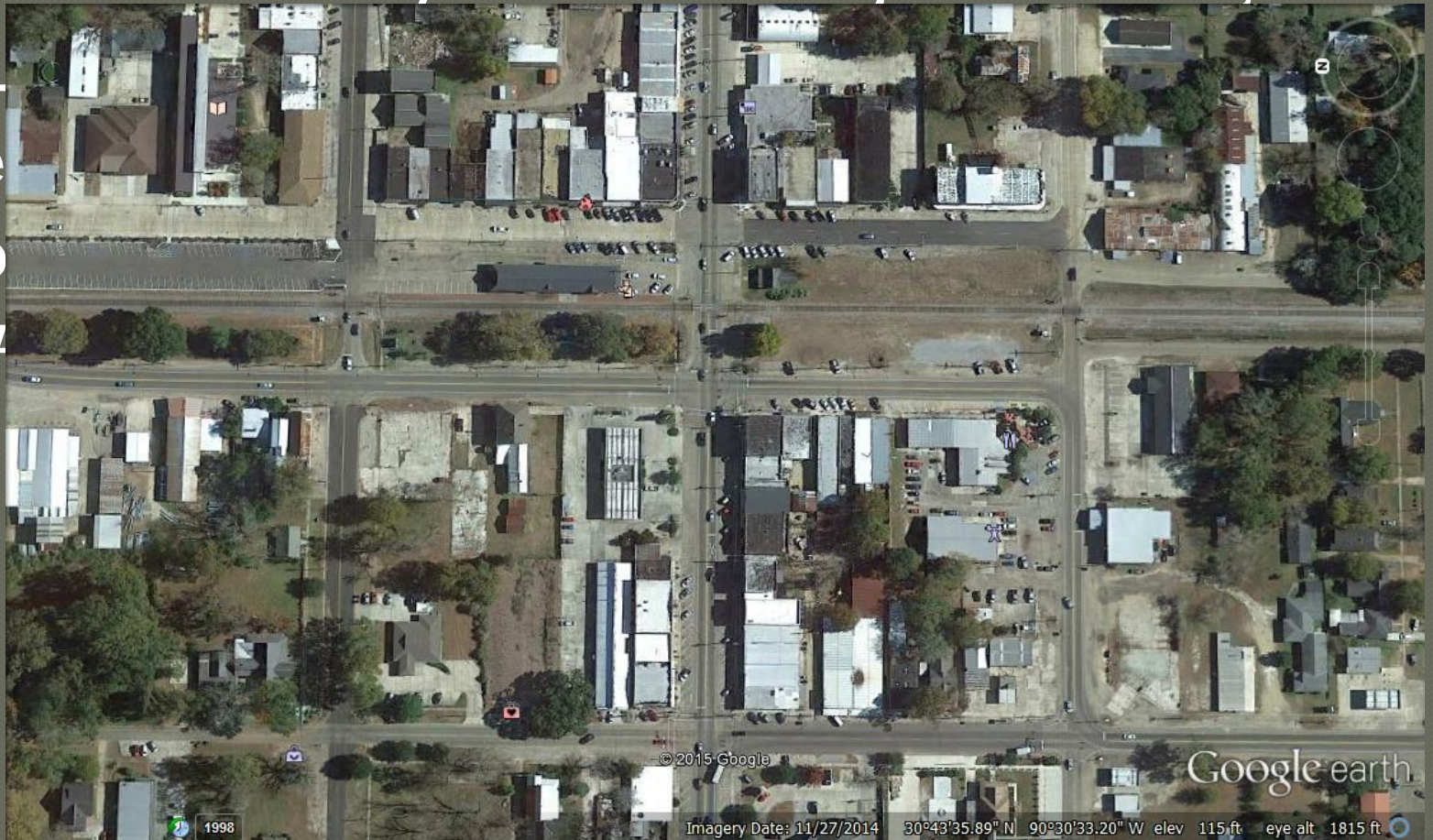
- Louisiana's laws require the driver to operate the vehicle responsibly.
- The train ALWAYS has the right of way.
- The flashing lights at a crossing are a traffic control device requiring the driver to stop and "...shall not proceed to cross the tracks until he can do so safely."
- Added green time can draw drivers over the crossing when they should be stopped for the flashing lights.



Other Factors:

- Due to the way Railroad signals work,

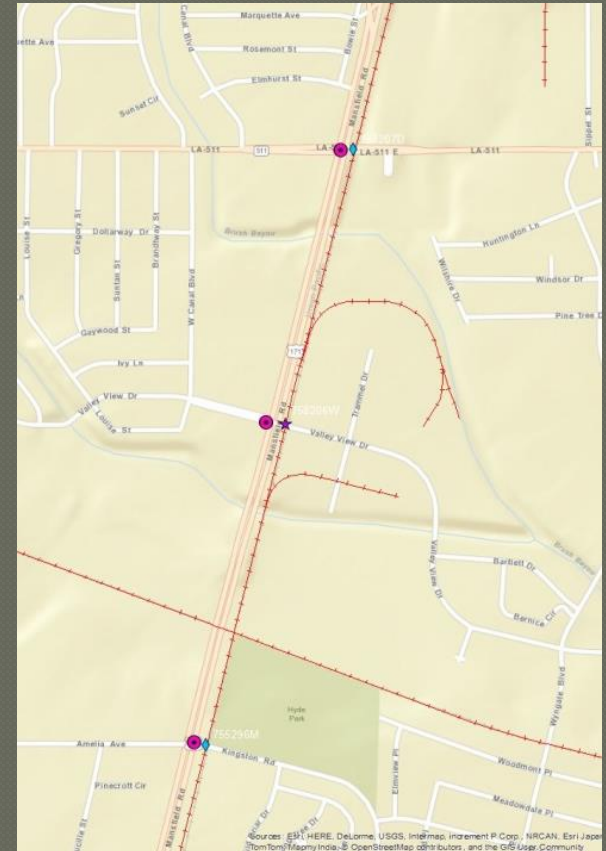
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DOTD's Preemption Program:

Working with other DOTD Sections:

- Works to coordinate between Traffic Engineering, District Traffic Operations, and Highway/Rail Safety.
 - Traffic Engineering developing long term plan to upgrade DOTD's traffic signals statewide.
 - Highway/Rail Safety receiving schedule and evaluating warning devices near intersections to determine if they can be connected without other upgrades.



Working with other DOTD Sections:

- Working to upgrade railroad signals as part of construction projects when possible and interconnect with traffic signals if appropriate.
- 23 CFR 646.214 (b) (2) requires that crossings be evaluated when they are within limits or “near terminus” of Federally Funded project.



Exploring the Alternatives:

- Exploring the use of lower cost options to bring the driver's attention to the crossing.
 - “Do Not Stop on Track” signs
 - Using pavement markings to highlight the dynamic envelope.
 - Photo-enforcement for problematic crossings.

“Do Not Stop on Track” Signs:

- ◉ District or local road authority needs to approve.



Pavement Markings:

- Using pavement markings to highlight the dynamic envelope.
 - 50% reduction in “Descending Violations”.
 - 200+ vehicles stopped on or near tracks during an 81 hour timeframe before application.
 - Over the same timeframe- 45% reduction of vehicles stopping on tracks.

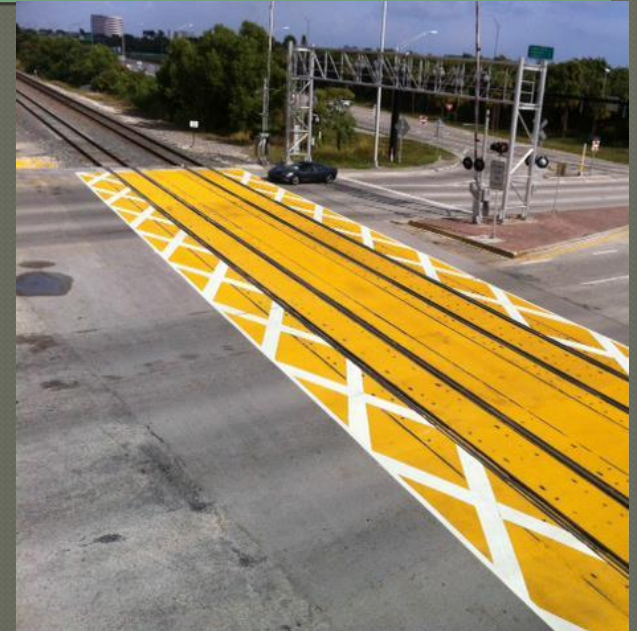


Photo-Enforcement:

- ◉ Need local and railroad support.
- ◉ FHWA cannot contribute to this option.



How you can get involved:

- If you are installing or upgrading a traffic signal within 200 feet of a railroad crossing:
 - contact the Highway/Rail Safety unit.
 - Try to install the controller box on the side of the intersection closest to the controller for the warning devices.
 - Use a controller that has the ability to be preempted.

Questions?

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